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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,029	09/08/2004	Takeo Kitamura	2004_1303A	7688
513 7590 12/27/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER STIMPert, PHILIP EARL	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 12/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/507,029

Applicant(s)

KITAMURA ET AL.

Examiner

Philip Stimpert

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Regarding claim 8, the last line of the claim recites "a direction downwardly away from said exhaust hole." Without some frame of reference, the word "downwardly" does not adequately define the structural relation of the direction of introduction of fluid into the interior space. For the purposes of this office action, downwardly will be interpreted with respect to a vertical axis of the separation chamber in which the upper end contains the exhaust hole.
4. Regarding claim 9, lines 3-5 twice recite "a direction downwardly away from said exhaust hole." These constitute further positive recitations of this limitation, and cause possible ambiguity as to the distinctness of these recited directions.
5. Regarding claim 10, line 2 sets forth a further positive recitation of "a direction downwardly away from said exhaust hole."
6. Further regarding claim 10, line 3 stipulates that the direction of "a central axis of said passage forms an angle of at least 60° with a central axis of said interior space." Whatever angle is formed by the passage central axis and the interior space central axis, the supplement of that angle is also formed. By definition (supplement of angle =

180° - angle), one of these angles must be greater than or equal to 90°. Thus, any arrangement of the passage central axis relative to the interior space will form an angle of at least 60°. For the purposes of this office action, this claim will be interpreted the angle  $\alpha$  as shown in Fig. 6 of the applicant's specification.

7. Regarding claim 12, line 6 recites "fluid." The antecedent basis, or lack thereof, of this limitation is unclear. It is unclear if this is substantially the same fluid as is being revolved in the separation or a different fluid, possibly relating to the lubricating oil stored in the oil-storage chamber from which this fluid is flowing. For the purposes of this office action, this recitation of fluid will be construed to refer to the same fluid as is being revolved in the separation chamber.

8. Regarding claim 13, section *ii* recites "a feed hole." This constitutes a second positive recitation of this limitation.

9. Further regarding claim 13, the claim does not clearly define the metes and bounds of the protection sought thereby. In any single, given configuration of a separation chamber, a separation pipe provided to that chamber could have a variety of configurations of radius, length, etc. Because of this, there is no single value of  $L/R$  at which the oil circulation rates of the given separation chamber configurations with and without separation pipes are equal. In other words, since there is no structure of a separation pipe described or claimed, there is no definition to a value calculated with respect to that structure. There is, therefore, no clear value or range of the ratio,  $L/R$ , specified by this claim, and the claim is thereby rendered indefinite.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 8-9, 11, and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kayukawa et al. (US 6,179,578).

12. Regarding claim 8, Kayukawa et al. teach a compressor (see Fig. 1) comprising a compressing mechanism for compressing a fluid that contains lubricating oil (col. 2, ln. 38-39), a separation chamber (43), having an interior space that is to have revolved therein fluid compressed by the compressing mechanism such that at least part of the lubricating oil contained in the fluid is separated from the fluid by centrifugal force produced by revolution of the fluid in the interior space, an exhaust hole (51) for exhausting the fluid from the interior space, and a feed hole (comprising the intersection of passage 18 and the interior surface of the separation chamber 41) for introducing the compressed fluid into the interior space in a direction downwardly away from the exhaust hole.

13. Regarding claim 9, Kayukawa et al. teach a passage (18a) for supplying the compressed fluid to the feed hole, the passage being directed in a direction downwardly away from the exhaust hole.

14. Regarding claim 11, Kayukawa et al. teach a discharge port (28) for discharging the compressed fluid from the compressing mechanism, and a slender guide passage

(18) communicating with said feed hole for guiding the compressed fluid from the discharge port to the feed hole.

15. Regarding claim 15, Kayukawa et al. teach that the separation chamber has an inner peripheral surface defining the interior space such that the interior space includes a columnar space (generally indicated by 43) within which the compressed fluid is revolved (see Fig. 3) and an exhaust hole (shown in Fig. 2 as a circular hole in plug 44) for exhausting the compressed fluid from the columnar space. As shown, the exhaust hole is substantially at one end of the columnar space and has a diameter smaller than the diameter of the columnar space at that end.

16. Regarding claim 16, as shown, the exhaust hole has the smaller diameter by virtue of a reducing portion (51) at the one end of the columnar space, and the reducing portion interconnects an outer circumference of the exhaust hole to an outer circumference of the columnar space.

### ***Claim Rejections - 35 USC § 103***

17. Claims 10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kayukawa et al. as applied to claim 8 above.

18. Regarding claim 10, Kayukawa et al. do not explicitly teach that the downward angle of passage 18 is at least 60°. However, one of ordinary skill in the art could glean from the disclosure of Kayukawa et al., specifically Fig. 2, an angle approximately equal to the 60° of the claim. One of ordinary skill in the art would not expect any significant difference between the downward angle shown by Kayukawa et al. and the range of at

least 60° claimed by the applicant. Therefore, the range of at least 60° would have been prima facie obvious to one of ordinary skill in the art at the time of the invention.

19. Regarding claims 13 and 14, Kayukawa et al. teach that the separation chamber is free of any separation pipe extending into the interior space. Further, Kayukawa et al. teach that the separation chamber has inner peripheral surface (generally indicated at 43) defining the interior space such that it includes a columnar space in which the compressed fluid is revolved, the columnar axis having a central axis in a first plane (perpendicular to the page in Fig. 3, and parallel to 18a), and that the feed hole has a central axis in a second plane (perpendicular to the page in Fig. 3), such that a distance R may be measured in a radial direction from the first plane to the inner peripheral surface of the interior space and a distance L may be measured in the same radial direction to a third plane (perpendicular to the page in Fig. 3 and containing the left boundary line of passage 18a). Kayukawa et al. do not teach anything specifically regarding a ratio of L/R. However, one of ordinary skill would expect the oil-circulation rate obtained by the structure of Kayukawa et al. to be similar to that obtained by the claimed ranges of L/R ratio. Therefore, the ranges claimed in claims 13 and 14 would have been prima facie obvious to one of ordinary skill in the art at the time of the invention.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kayukawa et al. in view of Hisanaga et al. (US 6,152,713).

21. Kayukawa et al. substantially teach the limitations of claim 8, from which claim 12 depends (see above rejection of claim 8 under 35 U.S.C. 102(b) for detailed discussion). Kayukawa does not teach an oil-storage chamber, nor a communication passage between such an oil-storage chamber and the interior space. Hisanaga et al. teach an oil-storage chamber (130, see in particular Fig. 12) and a communication passage (123) which opens in a tangential direction (see Fig. 14). Hisanaga et al. teach that their particular arrangement of these elements allows for a stable and constant supply of lubricating oil to the compressing mechanism (col. 16, ln. 52-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the oil separator of Kayukawa et al. to provide an oil-storage chamber and communication passage as taught by Hisanaga et al. in order to allow for a stable and constant supply of lubricating oil to the compressing mechanism of Kayukawa et al. One of ordinary skill in the art would further appreciate that fluid flowing from the communication passage into the interior space would not substantially disturb the revolution of the compressed fluid therein.

### ***Response to Arguments***

22. Applicant's arguments, see pg. 7, ln. 3-11, filed 8 September, 2007, with respect to objections to the drawings, specification, and abstract have been fully considered and are persuasive. The objections to the drawings, specification, and abstract have been withdrawn.



23. Applicant's arguments, see pg. 8, ln. 12, with respect to non-statutory double patenting have been fully considered and are persuasive. The nonstatutory double patenting rejection of claim 1 has been withdrawn.

24. Applicant's further arguments with respect to rejections over Hisanaga et al. and Kawata et al. have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Application/Control Number:  
10/507,029  
Art Unit: 3746

Page 9

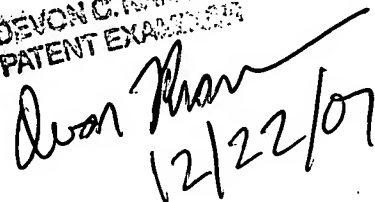
26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571) 270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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21 Dec 07

DEVON C. KRAMER  
PATENT EXAMINER

  
12/22/07